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Critical success factors for the development of trade exchanges

Jack Cook

Jack S. Cook, Ph.D., CFPIM, Rochester Institute of Technology

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Inefficiencies exist throughout the supply chain. Everyday business operations are often tedious and time-consuming. Transactions may be significantly delayed due to limitations associated with asynchronous communications. Electronic marketplaces provide a means for improving supply chain efficiency. They enhance liquidity by permitting a large number of buyers and sellers to connect with each other. Estimates indicate that B2B trade exchanges will facilitate $600 billion to $3 trillion (U.S. revenues) in trade by 2003 (Tumolo, 2001). Exchanges are found in a variety of industries including aerospace, agriculture, automotive, banking, chemical, education, energy, food, hospitality, paper, and steel. See **Table 1** for a representative list of trade exchanges and their corresponding industries.

B2B e-commerce has its roots in electronic data interchange (EDI) networks. Before trade exchanges became popular, EDI provided companies a means of communication. Exchanges expanded upon the basic concept of EDI. Information Technology (IT) and the Internet have made online trade exchanges a viable alternative to the complex communication networks that traditionally transmitted orders, invoices, payments, and status reports between businesses. Exchanges were formed when several companies such as Ariba, Commerce One, and Grainger used their procurement software to establish open markets on their own servers (Tumolo, 2001). These first exchanges were little more than online catalogs. Trade exchanges now provide businesses a means for substantially cutting procurement costs, while providing value-added services.

Business communication channels in most industries are complicated by the presence of thousands of buyers and sellers maintaining unique business-to-business (B2B) relationships with one another. This conglomeration of numerous communication channels has produced an intricate network of unique relationships between trading partners that simultaneously encourages inefficient, non-standardized, information-flow transaction platforms. While e-mail, voice mail, faxes, phone calls, and office visits all provide different means of communicating, the information sent from one party to another is vulnerable to factors that lead to message distortion. Therefore, for every business transaction conducted between companies, the effectiveness and efficiency of the exchange is determined by the cost associated with the transaction, the time taken to conduct the transaction, and the accuracy of the information. For years, companies have communicated

B2B Trade Exchange	Industry	Partners (not all partners are necessarily listed)
Covisint.com	Automobile	Ford Motor Co., Renault/Nissan, General Motors Corp., DaimlerChrysler AG, Toyota
GlobalNetXchange.com	Retail	Sears, Roebuck and Co., Carrefour Supernarche SA, J Sainsbury plc, Metro AG
AirNewCo*	Aviation	American, Continental, Delta, United
E2open.com	Electronics	IBM, Nortel Networks, Toshiba, Solectron
Pantellos	Energy	Consolidated Edison, Duke Energy, American Electric Power, Cinergy, Reliant Energy, Southern Company, Public Service Enterprise Group, Entergy, FirstEnergy, TYU, Pacific Gas & Electric, Edison International, Unicom, FPL Group, Sempra Energy
Quadrem	Mining, minerals and metals	Alcan Aluminium, Alcoa, Anglo American, BHP, De Beers Consolidated Mines
Transora.com	Consumer packaged goods	Earthgrains, Diageo, Sara Lee, Unilever, Coca-Cola, General Mills, Johnson & Johnson, Kraft Foods, PepsiCo, Proctor & Gamble
Energy and Petrochemicals Exchange	Energy and Petrochemicals	BP Amoco, Repsol YPF, Mitsubishi Electric, Phillips Petroleum, Occidental Petroleum, Royal Dutch/Shell Group, Conoco, Unocal, Equilon Enterprises, Dow Chemical, Statoil, Tosco, TotalFina Elf
Worldwide Retail Exchange	Retail	Walgreens, Jusco, Kmart, Casino, CVS, J.C Penney, Kingfisher, Auchan, Marks & Spencer, Target, Tesco, Royal Ahold, Albertson's, Safeway, Best Buy
Forest Express	Paper	International Paper, Georgia-Pacific, Weyerhaeuser
Rubbernetwork.com	Rubber	Goodyear, Michelin, Pirelli, Continental, Sumitomo Rubber, Bridgestone, Cooper
Hightechmatrix	Technology	Advanced Micro Devices, Compaq, Gateway, Hitachi, Hewlett-Packard, Quantum, Samsung, SCI Systems, Infineon Technologies, NEC, Western Digital, Solectron
Aerospace and Defense Global Trading Exchange	Aerospace and Defense	Raytheon, Boeing, Lockheed Martin, BAE (British Aerospace) Systems

Table 1. Representative List of Trade Exchanges and their Corresponding Industries

using these traditional business methods, while incurring all the side effects and system inefficiencies. Business partners have grown comfortable with the status quo (often EDI-based systems supplemented by personal contacts via phone, fax or email) and have thus resisted attempts to eliminate transaction inefficiencies.

Buyers and sellers, brought together by a third party that may operate an exchange, are able to communicate and perform a wide range of business functions. The third party entity does not take ownership or control of goods or services exchanged, but instead is a mediator facilitating interaction between buyers and sellers. The exchange provides buyers with a means of sourcing, allowing a buyer to compare prices, easily find substitutes for products, and information on product availability. As a result, buyers usually acquire products at lower prices and higher quality. Suppliers are provided another distribution channel, allowing them to gain greater exposure, and expanding markets.

Forecasts indicate that exchanges will account for less than seven percent of corporate buying worldwide by 2005 (Stundza, 2001). Two years ago, when large companies in such industries as automotive, aerospace, air travel and high tech industries began developing public, private and consortium exchanges, it appeared that the way companies procured products was going to be revolutionized. Today, many exchanges are struggling. Technological complexity, bickering between partners, fear of legal action, supplier distrust and a poor economic environment will ultimately doom many of these exchanges. However, the concept will survive and eventually will permeate all aspects of supply chain management.

The trend is towards private, not public, exchanges. Initially, it was thought that neutral third parties would operate exchanges and charge a small fee for each transaction, typically about 0.2 percent (Teschler, 2000). The logic was that sellers would pay commissions, much as they do to their own salespeople. Promises of a fully neutral exchange with efficient pricing methods and available inventory levels may ultimately prove too overly ambitious (Henig, 2000).

Public exchanges struggle to attract an adequate number of buyers and sellers. Many have folded. Others are redefining themselves. Less than one percent of the world's suppliers are connected to trade exchanges (Stundza, 2001). Many suppliers sell on a different value proposition than low cost such as experience, delivery or quality. They resist joining any type of exchange since they fear it will "commoditize" their products. Another challenge is that over the years, companies have refined their own request for quotation (RFQ) forms. Joining a trade exchange requires companies to adopt a standardized form, discarding a process that has served them well for many years. Also, it is difficulty to integrate suppliers' back-end systems with multiple exchanges. Consortium exchanges such as Covisint and smaller public exchanges that operate in a niche market have managed to survive, even though, for example, Covisint has recently experienced some changes. Some companies are building their own private marketplaces to cut costs and streamline business processes by moving their supply chain operations online. Although public exchanges must attract buyers and sellers, private exchanges can use a company's preexisting relationships with others.

THE B2B BOOM

B2B e-commerce will experience tremendous revenue growth during the next decade. Gartner Group forecasts global online B2B revenues could reach $4 trillion by 2003 (Gotschall, 2000). Forrester Research predicts that by 2004 online B2B transactions in the United States alone will hit $2.7 trillion (Jackson). Other research firms predict that online B2B transactions could create revenues of anywhere between $2.7 trillion and $7.3 trillion by 2004 (Gotschall, 2000). These figures are quite high compared to B2B revenues of only $131 billion last year, and to the much smaller online business-to-consumer (B2C) market, where less than $400 billion is expected to be spent in 2003 (Gotschall, 2000). B2B is increasingly important because companies buy and sell such large quantities. On the other hand, in the B2C market, consumer purchases are discretionary. Realizing B2B transactions directly affect a company's bottom line, businesses will increasingly turn to e-marketplaces.

By 2002, almost all U.S. firms will be involved in e-commerce in some form or another (Jackson, 2000). This growth will most likely be led by the creation of B2B virtual marketplaces, also known as e-marketplaces, e-hubs, or trade exchanges. Virtual marketplaces provide a unique many-to-many environment, potentially connecting large numbers of suppliers and buyers in a particular industry in a position to collaborate and conduct transactions in a neutral area. Recently, the focus of B2B e-commerce has been in areas such as the automobile industry. However, as more companies realize the benefits of B2B online exchanges, e-marketplaces are tapping into and revolutionizing more and more industries.

All online marketplaces have a similar goal—to provide mutual benefits to everyone involved while making a profit. One step e-hubs should take is to have a common goal from the start and communicate it clearly to participants. Many experts see the future of e-marketplaces changing to one of mega-portals which will provide all the needs of procurement of both specific goods, MROs, logistics, credit, financing, and documentation, making sites more one stop shopping for procurers than they currently are (Banham, 2000).

THE B2B COMMONALITIES

Although the varieties of e-hubs are numerous, there are some commonalties. In any exchange, the benefits to both buyers and sellers must be mutual (Henig, 2000). Otherwise, there would be no purpose for participating online. As seen in recent years, the move to the Internet

is almost inevitable. Everyone seems to have a website of some sort, and the move to using e-hubs will be no different. Companies will join together due to economic factors, and those that do not "will be wounded in their economic underbellies" (King, 2000, p. 48). Another characteristic of almost all online e-hubs is that expert advice is available. Marketplaces will need to employ experts in order to stay competitive in the long run. Venture capitalist John Mumford states, "You can always find the technology guys needed to make the marketplace work, but it's the industry specific expertise that sets a marketplace apart." (Willis, 2000, p. 126)

An introduction to vertical and horizontal marketplaces will be discussed next, followed by a description of the four types of marketplaces. A distinction between aggregate and matching e-hubs, neutral, biased, logistical and enabler sites will also be covered, followed by a view of what might occur in the next stage of this trend in online procurement.

		What Businesses Buy	
		Operating Inputs	Manufacturing Inputs
How Businesses Buy	Systematic Sourcing	**MRO Hubs** Ariba MRO.com BizBuyer.com	**Catalog Hubs** Chemdex SciQuest.com PlasticsNet.com
	Spot Sourcing	**Yield Managers** Employease Adauction.com Capacity.com	**Exchanges** e-Steel Paperexchange.com Altra Energy

Table 2. Major Types of e-Marketplaces

VERTICAL VS. HORIZONTAL MARKETPLACES

Usually trade exchanges involve competitors in a vertical industry creating or supporting supply chain hubs (Bacheldor and Wallace, 2000). "The concern is that these (trade exchanges) could become forms for firms to signal their intentions to each other," says William Kovacic, professor at George Washington University Law School in Washington, DC (Bacheldor and Wallace, 2000). Vertical marketplaces sell industry specific goods and can range from aerospace materials to perishable food items (Willis, 2000). Due to the sometimes obscure goods vertical industries deal with, special deliveries are common, causing logistics to be a problem as they cannot use normal third party services such as UPS (Kaplan & Sawhney, 2000). As with any e-hub, these sites will be most successful in those industries which "stand to derive the greatest potential savings" from online procurement (Willis, 2000, p. 126). Often this is best accomplished in industries which are fragmented due to the lack of a centralized marketplace (Willis, 2000). Another factor that contributes to success in vertical marketplaces is standardness of the products provided (Willis, 2000). Being a vertical marketplace does not automatically restrict one to a certain type of product. For example, VerticalNet, which now has been accepted among market buyers as well as sellers as being reliable, is selling a number of different "vertical" goods (Henig, 2000). These include everything from paper products to chemicals, to medical supplies (Henig, 2000). VerticalNet says that by diversifying the types of products it sells, it is hedging against those markets that do not grow as rapidly as others (Willis). This is part of the concern the FTC has with third party providers growing too large and controlling the markets in the pricing of products. Other times vertical marketplaces have partnerships with particular industry leaders, which helps to secure their sources of income and in essence, hedge them against losses (Henig, 2000). Covisint is an example of such a partnered vertical market and will be discussed later in this paper. At any rate, analysts expect the bulk of trades online to take place in vertical industries (King, 2000). This may be why it is also said that partnerships are going to be essential for horizontal marketplaces to survive in the long run as "verticals will be the destination sites where people link to horizontals." (Willis, 2000, p. 128)

Even though the predictions are for vertical industries to be dominant in the future, horizontal marketplaces carry current procurement cost savings of 30 to 35 percent in manufacturing companies and up to 50 percent in service based companies (Willis, 2000). Thus right now, making use of such a marketplace is therefore financially beneficial. Horizontal marketplaces link buyers and sellers of generic goods and services that everyone uses no matter what industry they are in (Willis, 2000). These goods are not industry specific and are often referred to as MROs (Maintenance, Repair and Operation products) that can range from plane tickets to spare parts, or office supplies (Kaplan & Sawhney, 2000). Since horizontal marketplaces serve all industries and deliver "normal" goods, third party delivery units can be used such as UPS, making horizontal marketplaces logistically easier (Kaplan & Sawhney, 2000). As with vertical marketplaces, savings will be most apparent with goods that are standard for all companies (a paper clip is a paperclip is a paperclip) and if one can order and deliver them cheaper by using an online process one should (Willis, 2000).

e-MARKETPLACE TYPES

Kaplan and Sawhney categorize four major types of e-marketplaces, separated into the "what" and the "how" as described in **Table 2**. Purchases can be separated into two types, manufacturing inputs and operating inputs

(Kaplan and Sawhney, 2000). This constitutes the "what", meaning what exactly is being traded. Then these inputs are divided into the "how" of either systematic or spot trading (Kaplan and Sawhney, 2000). Systematic trading is more of a contractual agreement, often establishing or fostering long-term relationships between buyers and sellers. Reciprocally spot trading is often for an immediate need at the lowest possible price and buyers and sellers depend on the third party marketplace to match them up quickly and efficiently. They do not foster long-term relationships and usually buyers and sellers do not know each other's identity. Kaplan and Sawhney set up these four types in a branching effect, with each "what" having two branches of "how" stemming from it. The four types, Catalog hubs, Exchanges, MRO hubs and Yield Managers, resemble the more elementary vertical and horizontal exchanges in that vertical exchanges sell manufacturing inputs and horizontals sell operating inputs. The four types are explained in more detail below.

- Catalog hubs—"are vertical markets that enable systematic sourcing of manufacturing inputs" and in the process reduce transaction costs, therefore creating value (Kaplan & Sawhney, 2000, p. 98). They are created for industry specific goods and can be either biased or unbiased in nature. Because of the specialty of most of the goods sold on these exchanges, they work closely with logistic distributors to ensure reliable and safe fulfillment of the orders.
- Exchanges—"are vertical markets that enable spot sourcing of manufacturing inputs" (Kaplan & Sawhney, 2000, p. 98). Procurement managers like these sites because they help to level out the peaks and valleys in the demand and supply curves by allowing rapid exchanges when needed. Because of the nature of spot trading, these marketplaces maintain the relationships between buyers and sellers, and finish the trades without contracts and often without informing either party who the other one is.
- MRO hubs—"are horizontal markets that enable systematic sourcing of operating inputs" (Kaplan & Sawhney, 2000, p. 98). The goods traded here most often are of low value but have high transaction costs associated with them. These sites therefore, provide value by decreasing the cost of procurement and increasing their efficiency. Because of the generality of these goods, third party logistic managers such as UPS can be used.
- Yield managers—"are horizontal markets that enable spot sourcing of operating inputs" (Kaplan & Sawhney, 2000, p. 98). These sites create immediate markets for operating resources such as manufacturing capacity, labor and advertising. They allow companies to contract and expand with their current needs without having to add fixed assets to their income statement. They can simply use online resources to fill in where they need help. These markets are beneficial to those industries with high price and demand volatility such as the electricity and utility markets. These industries also have high fixed assets with low liquidity, making the rapid change in demand troublesome.

These distinctions should help to define what types of services are available for online procurement. But they are not the only aspects that determine what type of services are available. There are also aggregate and matching marketplaces which differ in terms of followed procedures (Kaplan and Sawhney, 2000).

AGGREGATES AND MATCHING MARKETPLACES

Marketplaces differ in the type of trading that occurs, ranging from auction settings, to aggregate, or matching settings. These settings help to determine the relationships between the marketplaces and the customers. Aggregates bring together buyers and suppliers in large numbers providing one stop shopping. Set prices are the norm in an aggregate marketplace, and the buyer and seller positions are fixed (Kaplan and Sawhney, 2000). These marketplaces are most likely to succeed in those industries where the products are specialized, supplier industries are fragmented, and the cost of ordering is higher than the actual cost of the good (Kaplan and Sawhney, 2000). AltraEnergy and PlasticsNet are both examples of aggregate online marketplaces (Kaplan and Sawhney, 2000). Matching marketplaces bring together large numbers of buyers and suppliers to negotiate in real time (Kaplan and Sawhney, 2000). This can also be a setting for auctions online, FreeMarkets being a prime example of this exchange type. Matching marketplaces are often used more in spot markets because the prices are determined at the point of sale, and buyers and sellers are able to switch roles more readily. The matching technique works best in industries where the volume of goods traded is high, the logistics are easy (because of the nature of the goods sold), and the demand and prices are volatile. "Matching is a more powerful business model than aggregation, but the matching mechanism is far more complex and far more difficult to scale." (Kaplan and Sawhney, 2000, p. 102).

NEUTRAL AND BIASED MARKETPLACES

There are also differences in the way participants are treated within different markets depending on whether the marketplace is neutral or biased. If the marketplace is operated by an independent third party company who does not favor either buyers or sellers in either their advertising or fees, they are considered to be neutral (Kaplan and Sawhney, 2000). Those marketplaces who push supplies through the supply chain by attracting suppliers first and then matching up with buyers, are considered to be forward biased, pushing the supplies through (Kaplan and Sawhney, 2000). If the marketplace pays more attention to what buyers are looking for and

goes out and tries to find suppliers to fill their needs, they are considered to be reverse biased, pulling the goods through the system (Kaplan and Sawheney, 2000). Neutral marketplaces tend to succeed in fragmented industries on both the buyer and supplier sides (Kaplan and Sawhney, 2000). These supply side views of online marketplaces have been of recent concern, in terms of the logistics of providing security for both buyers and sellers.

LOGISTICS

B2B marketplaces have sprung up in numerous industries and yet most are lacking in the key supply chain areas including logistics, credit, financing and customer service (Banham, 2000). Logistics are important because even if a good is sold online at a discount, if the total cost to fulfill the order is outrageous, then the savings are lost. This idea has set off a new wave of start up Internet companies providing services such as logistical planning, credit ratings of customers, and other B2B needs (Banham, 2000). These new sites hoped to be linked to existing sites and be an icon portal allowing an order to be placed on such sites as FreeMarkets.com, and then linked to a logistics page to determine how much they will pay for delivery, what the financing terms will be, etc. (Banham, 2000). These sites will reduce the downside to online marketplaces as they will take the unknown, often hidden, expenses out of the process. Reliability will be a big marketing technique for these new firms as they will help to ensure that once money is deposited, the goods will be delivered safely, or once the goods are sent, the money will be deposited. This creditworthiness has been a problem for online markets as demonstrated in the major losses acquired from a 12-year-old bidding, $12 million for a URL address, of Star Wars. He was obviously not able to pay, causing the issuing company to lose out on several smaller bids for the URL (Banham, 2000). Unfortunately, this happens all too frequently.

ENABLERS

Enablers are those companies doing the dirty work behind the scenes, creating the technology that powers these marketplaces (Willis, 2000). Even within this realm, there are differences in terms of the services they provide (Willis, 2000). Some of them offer a full range of services covering all the technology needed in order to run a marketplace, and others sell only niche products, such as software needed to start an online auction site. Despite what type they are, all enablers need to have competent sales people, able to talk to, correspond with and explain things to the major Cs of companies—the CEO, the CFO, and the CTO (Willis). These are the people who are initiating the changes and have the final say. Therefore they are talking to the enablers themselves, creating a need for a more technologically competent personable sales staff (Willis, 2000). Computers tend to scare more traditional business people, and therefore communication fosters relationships with those who need greater assistance. Analysts predict that those enablers who offer a full range of products for e-commerce solutions will succeed due to companies not wanting to pay for a piece now, and a piece later on, and the constant integration costs associated with each new software design (Willis, 2000). This will weed out several niche suppliers (Banham, 2000). "There will be a good deal of Darwinism taking place among B2B exchanges over the next 6-9 months." (Henig, 2000, p. 134)

EXAMPLES OF B2B MARKETPLACES

Most of the marketplaces that are in operation now are dealing in fairly small, niche markets but are looking and starting to partner with others in order to expand and be all inclusive (Banham, 2000). This is due to the belief that by increasing the possibilities of value creation, they will increase their chances for long term survival (Henig, 2000). "The best exchanges of the future... must realize they are really about connecting supply chains to supply chains." (Henig, 2000, p. 132) Attracting interested parties must first be done. AMR Research found that DirectAg.com (an agricultural exchange for farmers), though rich in content, does not have farmers flocking to buy online. Reasons include farmers' lack of Internet access, their fear of disrupting long-standing relationships with current vendors and retailers, and the absence of real-time advice (Morneau, 2001).

ProtoMarket.com declares itself the future of "Collaborative Contract Manufacturing." It describes itself as "a revolutionary marketplace that matches buyers and sellers of rapid prototyping, tooling, casting, CNC machining, production tooling, and short-run production." It states very clearly what their mission statement is as well as the benefits for both buyers and suppliers. "Our vision is to become the first comprehensive engineering site, complete with a suite of value-added services for manufacturers, design engineers and service bureaus. We are pleased to serve a broad base of purchasers and vendors of RM (Rapid Manufacturing) services, and have already proven ourselves responsive to our customers' needs." As described on their Web site (http://www.protomarket.com/):

As a buyer you can:

- Post RFQs, receive quotes and comments from vendors, and place orders—all electronically.
- Ensure that you receive the best price and delivery time for your orders.
- Have access to a global network of pre-qualified, reliable service bureaus—all the vendors approved by Protomarket.com have been carefully screened and are rated by our buyers after each job.

As a vendor you can:

- Expand your customer base and enter into new markets quickly—without an expensive sales force.
- View RFQs and submit quotes and comments directly to the buyers.

- Ensure you never get stuck with underutilized capacity.

Other features:

- Buyers and vendors can both discuss project details in real-time in our private, secure virtual conference room.
- Buyers can set up lists of preferred or barred vendors.
- Up to the minute account summary and RFQ tracking.
- Personal online assistance with a customer service agent during business hours

This is but one example of what industry can expect as the technological infrastructure becomes pervasive. Vertical marketplaces usually serve one industry by facilitating the purchase of direct inputs, typically along with product expertise and in-depth industry knowledge (Harbour, 2001). Examples would be Covisint, Aerospan, Exostar, Aeroxchange, Forest Express and e2open. e2Open, founded by IBM, Acer, Hitachi, LG Electronics, Lucent Technologies, Matsushita Electric (Panasonic), Nortel Networks, Seagate Technology, Solectron and Toshiba, is centered around the common supplier base of computer, telecommunications equipment and consumer electronics makers and is open to a broad range of electronics companies, including contract manufacturers and distributors (Stundza, 2001). The site has been used for a number of online inventory liquidation auctions, but they have no precise commitments as to how they plan to buy through the site (Stundza, 2001). Vertical marketplaces have come under the most FTC scrutiny because they usually involve competitors in a particular industry and they could facilitate information sharing and price fixing (Bacheldor and Wallace, 2000).

MECHANICS OF TRADE EXCHANGES

Business-to-business trade exchanges must address the issues of availability, security, reliability, scalability, flexibility, transaction support and standard support in order to be successful (Gupta, 2000). There are many questions that must be answered when constructing a trade exchange. One question that must be addressed is whether buyers and sellers should be identified. Should competing bids for products be posted so all those bidding may review them?

According to Clint Willis in Forbes, "vertical and horizontal market makers will find new revenue models as well. Currently, most derive cash from a mix of fees per transaction, site advertising, and subscriptions. Down the road, however, transactions will become a commodity as market makers will lower their fees to generate liquidity. That's why they'll make bigger and bigger chunks of their money by providing services, such as logistics and fulfillment, and charging marketplace participants for data about buying and selling patterns" (Willis, 2000).

GOVERNMENT INTERVENTION

Usually trade exchanges involve competitors in a vertical industry creating or supporting supply chain hubs (Bacheldor and Wallace, 2000). "The fundamental competition issues surrounding B2Bs are collusion (between competitors), exclusion (of disfavored competitors), and foreclosure in the market for markets. The first and second issues concern the markets for either the input goods being bought and sold on the B2B exchange or the market for a downstream product. The third issue concerns only the market for B2B marketplaces" (Harbour, 2001).

Rivals increasingly collaborate online through trade exchanges. As Hillard Sterling, a partner with Gordon & Glickson (a law firm specializing in IT issues) states, "Antitrust law precludes competitors from working together or sharing information if the effect is to shape pricing in markets" (Bacheldor and Wallace, 2000). Despite all its promise, trade exchanges give rise to a number of legal issues including antitrust concerns.

The FTC identified four major B2B antitrust issues: (1) "information sharing agreements that could facilitate coordination;" (2) "the exercise of monopsony power by large buying groups;" (3) "agreements among competitors to exclude or discriminate against rivals of a B2B's participant-owners;" and (4) "competition among marketplaces themselves which might be affected by exclusivity, either de facto through over-inclusive ownership structures or through rules or incentives that keep a B2B's participants from using or supporting a rival exchange" (Harbour, 2001). Depending on how a trade exchange is set up, it could be a tool for collusion, especially if suppliers are privy to information about deals other suppliers are making. "The concern is that these (trade exchanges) could become forms for firms to signal their intentions to each other," says William Kovacic, professor at George Washington University Law School in Washington, DC (Bacheldor and Wallace, 2000). That way the exchange could become a vehicle for price fixing. Monopsony, where one buyer or group of buyers imposes its will on suppliers (by pursuing lower prices) could potentially harm suppliers if not monitored. Regulators are also concerned that exchanges might use their power against nonparticipating companies or even against participating companies that are not shareholders of the exchange.

FTC Chairman, Robert Pitofsky, said antitrust concerns are raised whenever competing companies come together as they are beginning to with trade exchanges. However, he pointed out that at this point in the development of trade exchanges this is not his primary concern. He stated exchanges are "immensely promising. I'm really more concerned in understanding the efficiencies of these arrangements than trying to isolate problems" (Carroll and Lundgaard, 2000).

Zev Laderman, Chief Executive of Tradeum (a company that develops platforms used to establish e-market-

places), states the following: "I definitely think it's something the FTC should be looking into because there is always the potential for some kind of anti-competitive activities. But, at the same time, it is far too early to be placing curbs on the marketplaces. At the end of the day, you have to remember that the Internet is just another sales channel." (Brown and Duvall, 2000) Ben Isaacson, Executive Director of the Association for Interactive Media (largest trade organization for Internet companies) described the FTC inquiry into Covisint as premature (Brown and Duvall, 2000). In addition, he states that "It's not like they are colluding here. They aren't working together to establish a monopoly over vendor relationships. It's a better way of doing business" (Brown and Duvall, 2000).

Rob Tarkoff, Commerce One's general council and senior vice president of corporate development, states that the FTC's inquiries concerning Covisint "... is part of the overall education process the FTC is going through. They really want to take the time to understand what is involved." (Lundegaard, 2000) In April 2000, the FTC issued general guidelines concerning how companies may collaborate within current antitrust rules. For the moment, the Justice Department, Federal Trade Commission, European Commission, and Bundeskartellamt (Germany's antitrust agency) have all taken a relatively hands-off approach.

Representative Tom Bliley (R-VA), Chairman of the House Committee on Commerce, sent a letter to the President in February 2000 that asked the administration to "define a comprehensive vision of the trade aspects of electronic commerce, to promote it actively internationally, and to focus rapidly on beginning negotiations in the services area to lock in the benefits of open markets for the new economy." (Brown and Duvall, 2000) Bliley recognized the need to actively protect global B2B commerce by working with international trade groups such as the World Trade Organization.

CONCLUSION AND FUTURE RESEARCH

Trade exchange participation can benefit both buyers and sellers. Whether or not you participate should depend on the industry your company's competes within and its goals. It also depends on the type of goods and services you provide and the support systems currently in place. Trade exchanges are still in their infancy. What does the future hold? Exchanges will increasingly provide better support for the 3Cs (communication, cooperation, and collaboration) and 3Vs of collaboration (velocity, visibility, validity–feasibility of the plan and the supply chain to meet demand).

The hype surrounding trade exchanges has been high. Some online trade exchanges generate more publicity than revenues. Failures are highly publicized but many trade exchanges are flourishing. The hype associated with trade exchanges has peaked. We are currently in a period of increasing despair over the failure of some well-known trade exchanges. This shake-out is natural. Some future research questions that need to be addressed are:

- How are trade exchange participants selected? Who does it?
- What are the legal obligations?
- What are the criteria for buyers? Sellers?
- What technologies are best able to support the application process? What is the impact of trust? Do people need to meet face-to-face first?
- What role should trade exchanges play in building relationships between trade exchange participants?
- What impact does trade exchange participation have on the total cost of buying? Selling?
- As trade exchanges evolve, what impact does this have on participants? Total cost of buying? Total cost of selling?
- What role will the exchange of knowledge play in successful business models for trade exchanges?
- Ultimately, how will trade exchanges impact productivity in specific industries?

As one can see, there are a number of interesting areas for future research. Given the pace of technological change, such research is challenging.

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ABOUT THE AUTHOR

Jack S. Cook, Ph.D., CFPIM, is a professor, speaker, author, and consultant. He is an associate professor of management information systems at the Rochester Institute of Technology (RIT). His areas of expertise include Electronic Commerce, Information Systems and Production/Operations Management. Cook's extensive experience teaching and training over the last two decades includes over 60 conference presentations and numerous journal articles. He has an entertaining and engaging approach and is known for bringing theories to life.

Cook has been an active member of APICS for years. He is a CPIM certification instructor, and has developed and delivered many on-site training programs. He enjoys showing people how to apply the APICS body of knowledge both personally and professionally. Currently, he is serving as the president for the Rochester, New York chapter.

Cook is a Certified Fellow in Production and Inventory Management (CFPIM). His education includes a Ph.D. in business administration and an M.S. in computer science from Washington State University. He also has an M.B.A., an M.A. in mathematics, and a B.S. in computer science from the University of South Dakota.